

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NE-03-AD; Amendment 39-12883; AD 2002-19-03]

RIN 2120-AA64

Airworthiness Directives; Textron Lycoming IO-540, LTIO-540 and TIO-540 Series Reciprocating Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule, request for comments.

SUMMARY: This amendment supersedes emergency airworthiness directive (AD) 2002-17-53 that was sent previously to all known U.S. owners and operators of Textron Lycoming LTIO-540 and TIO-540 series engines, rated at 300 horsepower (HP) or higher. That action requires, before further flight, replacing certain serial-numbered crankshafts that were hammer forged with crankshafts that were press forged. That AD was prompted by reports of crankshaft failures in LTIO-540 and TIO-540 engines, rated at 300 HP or higher. This amendment expands the suspect population of engines to include engines with crankshafts that were manufactured between March 1997 and the present and all IO-540 engines with crankshafts that were manufactured between March 1997 and the present that have been modified by supplemental type certificate (STC) by installing a turbocharger system. The actions specified by this AD are intended to prevent failure of the crankshaft, which could result in total engine power loss, in-flight engine failure and possible forced landing.

DATES: Effective September 20, 2002.

The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of September 20, 2002.

Comments for inclusion in the Rules Docket must be received on or before November 19, 2002.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-NE-03-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may be inspected at this location, by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. Comments may also be sent via the Internet using the following address: "9-ane-adcomment@faa.gov". Comments sent via the Internet must contain the docket number in the subject line.

FOR FURTHER INFORMATION CONTACT: Rocco Viselli or Norm Perenson, Aerospace Engineer, New York Aircraft Certification Office, FAA, Engine and Propeller Directorate, 10 Fifth Street, Third Floor, Valley Stream, NY 11581-1200; telephone (516) 256-7531 or (516) 256-7537; fax (516) 568-2716.

SUPPLEMENTARY INFORMATION: On August 16, 2002, the FAA issued emergency AD 2002-17-53, applicable to Textron Lycoming LTIO-540 and TIO-540 series engines, rated at 300 HP or higher, to supersede emergency AD 2002-04-51 issued on February 11, 2002. AD 2002-17-53 requires replacing certain crankshafts that were manufactured using a hammer-forged process with crankshafts that were manufactured using a press-forged process. That action was prompted by reports of 17 crankshaft failures in LTIO-540 and TIO-540 engines, rated at 300 HP or higher, which were assembled with certain crankshafts that were manufactured using a hammer-forged process. The FAA is continuing the investigation into the cause of the crankshaft failures, and further regulatory action may follow. This action is prompted by an additional crankshaft failure that was outside the population of crankshafts covered by AD 2002-17-53. This AD requires the same replacement of certain crankshafts before further flight, and includes material testing of certain crankshafts manufactured between March 1997 and the present. This AD also expands the applicability to include all IO-540 engines with crankshafts that were manufactured between March 1997 and the present that have been modified by STC by installing a turbocharger system. This condition, if not corrected, could result in crankshaft failure, which could result in total engine power loss, in-flight engine failure and possible forced landing.

Manufacturer's Service Information

The FAA has reviewed the technical contents of Lycoming Mandatory Service Bulletin (MSB) No. 552, dated August 16, 2002, that provide tables of the affected engine and crankshaft serial numbers (SN's).

FAA's Determination of an Unsafe Condition and Required Actions

Since an unsafe condition has been identified that is likely to exist or develop on other Textron Lycoming LTIO-540 and TIO-540 engines, rated at 300 HP or higher, and on IO-540 engines that have been modified by STC by installing a turbocharger system with certain crankshafts installed, this AD requires removal of certain crankshafts before further flight and material testing of certain other crankshafts.

Immediate Adoption of This AD

Since it was found that immediate corrective action was required, notice and opportunity for prior public comment thereon were impracticable and contrary to the public interest, and good cause existed to make the AD effective immediately on August 16, 2002, to all known U.S. owners and operators of Textron Lycoming LTIO-540 and TIO-540 engines, rated at 300 HP or higher. These conditions still exist, and the AD is hereby published in the Federal Register as an amendment to Section 39.13 of part 39 of the Federal Aviation Regulations (14 CFR part 39) to make it effective to all persons.

Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written

data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 2002-NE-03-AD." The postcard will be date stamped and returned to the commenter.

Regulatory Analysis

This final rule does not have federalism implications, as defined in Executive Order 13132, because it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

Sec. 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.airweb.faa.gov/rgl"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2002-19-03 Textron Lycoming: Amendment 39-12883. Docket No. 2002-NE-03-AD. Supersedes Emergency AD 2002-17-53.

Applicability

This AD is applicable to all Textron Lycoming LTIO-540 and TIO-540 engines, rated at 300 horsepower (HP) or greater and all IO-540 engines, rated at any HP, that have been modified by supplemental type certificate (STC) listed in Table 1 of this AD, by installing a turbocharger system. These engines are used on, but not limited to Piper Navajo (PA 31, PA 31-350, and PA 31-325), Piper Saratoga (PA 32-301T, PA 32R-301T), Piper Aerostar (PA 60-700P), Piper Malibu Mirage (PA 46-350P), Piper Mojave (PA 31P-350) Appalachian Aircraft Corporation Gavilan (EL-1), and Cessna T-206 airplanes. Table 1 follows:

TABLE 1.—LIST OF STC NUMBERS

SA000214DE	SA00356DE	SA01925AT	SA09650SC
SA469NE	SA2062WE	SA2118NM	SE2122WE
SA2123NM	SA257CE	SA2657WE	SA2082WE
SA305SO	SA3513WE	SA3719SW	SA385WE
SA4942NM	SA529WE	SA530WE	SA539WE
SA5699NM	SA811WE	SA840WE	SA909WE
SA978WE	SE00357DE	SE01949AT	SE1657NM
SE978NM	SE17WE	SE21WE	SE22WE
SE4157NM	SE5869SW	SE40WE	SE60WE
SE6WE	SE7734SW	SE81WE	SA01925AT
SA1648NM	SA4156NM	SA1747CE	SE4941NM
SA2656WE	SA000214DE		

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance

Compliance with this AD is required as indicated unless already done.

To prevent crankshaft failure, which could result in total engine power loss, in-flight engine failure and possible forced landing, do the following:

LTIO-540 Engines, TIO-540 Engines, Rated at 300 HP or Greater

(a) If your engine SN is listed in Table 1 of Lycoming Mandatory Service Bulletin (MSB) No. 552, dated August 16, 2002, remove the crankshaft before further flight.

(b) If your engine SN is listed in Table 2 of this AD, do the following; Table 2 follows:

Table 2. Engine Serial Numbers for Crankshafts Manufactured from March 2002 to Present

Engine Model	Engine SN	Engine Model	Engine SN
TIO-540-A2B	9149-61A	TIO-540-AE2A	6711-61A
TIO-540-AE2A	10441-61A	TIO-540-AE2A	9808-61A
TIO-540-AE2A	10534-61A	TIO-540-AE2A	9946-61A
TIO-540-AE2A	10536-61A	TIO-540-AH1A	11264-61A
TIO-540-AE2A	10541-61A	TIO-540-AH1A	11301-61A
TIO-540-AE2A	10546-61A	TIO-540-AH1A	11305-61A
TIO-540-AE2A	10626-61A	TIO-540-AJ1A	11298-61A
TIO-540-AE2A	10649-61A	TIO-540-AJ1A	11303-61A
TIO-540-AE2A	10754-61A	TIO-540-AJ1A	11304-61A
TIO-540-AE2A	10757-61A	TIO-540-AJ1A	11315-61A
TIO-540-AE2A	10764-61A	TIO-540-AJ1A	11316-61A
TIO-540-AE2A	11283-61A	TIO-540-AJ1A	11319-61A
TIO-540-AE2A	11307-61A	TIO-540-J2BD	10394-61A
TIO-540-AE2A	4722-61A	TIO-540-J2BD	7712-61A
TIO-540-AE2A	4920-61A	TIO-540-J2BD	7783-61A
TIO-540-U2A	9892-61A		

(1) Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A.; telephone (570) 323-6181, within 10 hours time-in-service (TIS) to arrange for a crankshaft material test.

(2) Operation of the engine beyond 10 hours TIS after the effective date of this AD or while the material is being tested is not permitted.

(3) If your crankshaft fails the material testing, remove the crankshaft before further flight.

(4) If your crankshaft passes the material testing, the crankshaft may be returned to service.

(c) If your engine SN is listed in Table 3 of this AD, do the following; Table 3 follows:

Table 3. Engine Serial Numbers for Crankshafts Manufactured from March 1997 to March 1999

Engine Model	Engine SN	Engine Model	Engine SN	Engine Model	Engine SN
LTIO-540-F2BD	399-68A	TIO-540-AE2A	10278-61A	TIO-540-AJ1A	10347-61A
LTIO-540-F2BD	1179-68A	TIO-540-AE2A	10303-61A	TIO-540-AJ1A	10348-61A
LTIO-540-F2BD	1632-68A	TIO-540-AE2A	10306-61A	TIO-540-AJ1A	10349-61A
LTIO-540-F2BD	1734-68A	TIO-540-AE2A	10318-61A	TIO-540-AJ1A	10370-61A
LTIO-540-F2BD	2811-68A	TIO-540-AE2A	10319-61A	TIO-540-AJ1A	10380-61A
LTIO-540-F2BD	2812-68A	TIO-540-AE2A	10331-61A	TIO-540-AJ1A	10383-61A
LTIO-540-J2B	244-68A	TIO-540-AE2A	10342-61A	TIO-540-AJ1A	10396-61A
LTIO-540-J2B	344-68A	TIO-540-AE2A	10345-61A	TIO-540-AJ1A	10402-61A
LTIO-540-J2B	797-68A	TIO-540-AE2A	10350-61A	TIO-540-AJ1A	10403-61A
LTIO-540-J2B	834-68A	TIO-540-AE2A	10360-61A	TIO-540-AJ1A	10410-61A
LTIO-540-J2B	870-68A	TIO-540-AE2A	10368-61A	TIO-540-AJ1A	10414-61A
LTIO-540-J2B	874-68A	TIO-540-AE2A	10374-61A	TIO-540-AJ1A	10418-61A
LTIO-540-J2B	911-68A	TIO-540-AE2A	10392-61a	TIO-540-AJ1A	10422-61A
LTIO-540-J2B	921-68A	TIO-540-AE2A	10407-61A	TIO-540-AJ1A	10439-61A
LTIO-540-J2B	930-68A	TIO-540-AE2A	10415-61A	TIO-540-AJ1A	10447-61A
LTIO-540-J2B	1053-68A	TIO-540-AE2A	10420-61A	TIO-540-AJ1A	10498-61A
LTIO-540-J2B	1070-68A	TIO-540-AE2A	10465-61A	TIO-540-AJ1A	10584-61A
LTIO-540-J2B	1100-68a	TIO-540-AE2A	10475-61A	TIO-540-AJ1A	10639-61A
LTIO-540-J2B	1103-68A	TIO-540-AE2A	10511-61A	TIO-540-AJ1A	10694-61A
LTIO-540-J2B	1169-68A	TIO-540-AE2A	10517-61A	TIO-540-AJ1A	11186-61A
LTIO-540-J2B	1184-68A	TIO-540-AE2A	10532-61A	TIO-540-AJ1A	11269-61A
LTIO-540-J2B	1287-68A	TIO-540-AE2A	10538-61A	TIO-540-F2BD	3171-61A
LTIO-540-J2B	1298-68A	TIO-540-AE2A	10539-61A	TIO-540-F2BD	5123-61A
LTIO-540-J2B	1466-68A	TIO-540-AE2A	10597-61A	TIO-540-F2BD	5719-61A
LTIO-540-J2B	1489-68A	TIO-540-AE2A	10782-61A	TIO-540-F2BD	6100-61A
LTIO-540-J2B	1520-68A	TIO-540-AE2A	10791-61A	TIO-540-F2BD	8286-61A
LTIO-540-J2B	1749-68A	TIO-540-AE2A	11056-61A	TIO-540-F2BD	10480-61A
LTIO-540-J2B	1780-68A	TIO-540-AE2A	11105-61A	TIO-540-J2B	476-61A
LTIO-540-J2B	1844-68A	TIO-540-AH1A	1005-61A	TIO-540-J2B	2567-61A
LTIO-540-J2B	1971-68A	TIO-540-AH1A	1369-61A	TIO-540-J2B	2812-61A
LTIO-540-J2B	2123-68A	TIO-540-AH1A	9879-61A	TIO-540-J2B	3284-61A

LTIO-540-J2B	2362-68A	TIO-540-AH1A	9896-61A	TIO-540-J2B	3500-61A
LTIO-540-J2B	2504-68A	TIO-540-AH1A	9925-61A	TIO-540-J2B	3562-61A
LTIO-540-J2B	2637-68A	TIO-540-AH1A	9933-61A	TIO-540-J2B	3575-61A
LTIO-540-J2B	2817-68A	TIO-540-AH1A	9935-61A	TIO-540-J2B	3628-61A
LTIO-540-J2B	2876-68A	TIO-540-AH1A	9936-61A	TIO-540-J2B	3730-61A
LTIO-540-J2B	2975-68A	TIO-540-AH1A	9949-61A	TIO-540-J2B	3921-61A
LTIO-540-J2B	2976-68A	TIO-540-AH1A	9950-61A	TIO-540-J2B	4009-61A
LTIO-540-J2B	2977-68A	TIO-540-AH1A	9955-61A	TIO-540-J2B	4218-61A
LTIO-540-J2B	2979-68A	TIO-540-AH1A	9957-61A	TIO-540-J2B	4567-61A
LTIO-540-J2B	2980-68A	TIO-540-AH1A	9959-61A	TIO-540-J2B	4727-61A
LTIO-540-J2BD	162-68A	TIO-540-AH1A	9961-61A	TIO-540-J2B	4782-61A
LTIO-540-J2BD	293-68A	TIO-540-AH1A	9974-61A	TIO-540-J2B	5053-61A
LTIO-540-J2BD	334-68A	TIO-540-AH1A	9975-61A	TIO-540-J2B	5242-61A
LTIO-540-J2BD	418-68A	TIO-540-AH1A	9977-61A	TIO-540-J2B	5547-61A
LTIO-540-J2BD	445-68A	TIO-540-AH1A	9978-61A	TIO-540-J2B	5899-61A
LTIO-540-J2BD	545-68A	TIO-540-AH1A	9981-61A	TIO-540-J2B	5934-61A
LTIO-540-J2BD	549-68A	TIO-540-AH1A	9983-61A	TIO-540-J2B	6186-61A
LTIO-540-J2BD	569-68A	TIO-540-AH1A	9986-61A	TIO-540-J2B	6290-61A
LTIO-540-J2BD	607-68A	TIO-540-AH1A	9991-61A	TIO-540-J2B	6300-61A
LTIO-540-J2BD	614-68A	TIO-540-AH1A	9992-61A	TIO-540-J2B	6303-61A
LTIO-540-J2BD	623-68A	TIO-540-AH1A	9995-61A	TIO-540-J2B	6402-61A
LTIO-540-J2BD	632-68A	TIO-540-AH1A	9996-61A	TIO-540-J2B	6506-61A
LTIO-540-J2BD	737-68A	TIO-540-AH1A	10003-61A	TIO-540-J2B	6788-61A
LTIO-540-J2BD	840-68A	TIO-540-AH1A	10007-61A	TIO-540-J2B	6845-61A
LTIO-540-J2BD	857-68A	TIO-540-AH1A	10013-61A	TIO-540-J2B	6892-61A
LTIO-540-J2BD	858-68A	TIO-540-AH1A	10017-61A	TIO-540-J2B	7223-61A
LTIO-540-J2BD	934-68A	TIO-540-AH1A	10025-61A	TIO-540-J2B	7313-61A
LTIO-540-J2BD	1052-68A	TIO-540-AH1A	10026-61A	TIO-540-J2B	8060-61A
LTIO-540-J2BD	1084-68A	TIO-540-AH1A	10030-61A	TIO-540-J2B	8114-61A
LTIO-540-J2BD	1088-68A	TIO-540-AH1A	10031-61A	TIO-540-J2B	8349-61A
LTIO-540-J2BD	1152-68A	TIO-540-AH1A	10032-61A	TIO-540-J2B	8629-61A
LTIO-540-J2BD	1210-68A	TIO-540-AH1A	10045-61A	TIO-540-J2B	8953-61A
LTIO-540-J2BD	1270-68A	TIO-540-AH1A	10046-61A	TIO-540-J2B	8992-61A
LTIO-540-J2BD	1311-68A	TIO-540-AH1A	10047-61A	TIO-540-J2B	9050-61A
LTIO-540-J2BD	1418-68A	TIO-540-AH1A	10054-61A	TIO-540-J2B	9200-61A

LTIO-540-J2BD	1484-68A	TIO-540-AH1A	10055-61A	TIO-540-J2B	9277-61A
LTIO-540-J2BD	1552-68A	TIO-540-AH1A	10066-61A	TIO-540-J2B	9942-61A
LTIO-540-J2BD	1600-68A	TIO-540-AH1A	10073-61A	TIO-540-J2B	9943-61A
LTIO-540-J2BD	1709-68A	TIO-540-AH1A	10074-61A	TIO-540-J2B	9944-61A
LTIO-540-J2BD	1752-68A	TIO-540-AH1A	10077-61A	TIO-540-J2B	9945-61A
LTIO-540-J2BD	1816-68A	TIO-540-AH1A	10087-61A	TIO-540-J2B	9958-61A
LTIO-540-J2BD	1841-68A	TIO-540-AH1A	10088-61A	TIO-540-J2B	9960-61A
LTIO-540-J2BD	1853-68A	TIO-540-AH1A	10096-61A	TIO-540-J2B	9967-61A
LTIO-540-J2BD	1924-68A	TIO-540-AH1A	10097-61A	TIO-540-J2B	9970-61A
LTIO-540-J2BD	1933-68A	TIO-540-AH1A	10122-61A	TIO-540-J2B	9972-61A
LTIO-540-J2BD	1951-68A	TIO-540-AH1A	10124-61A	TIO-540-J2B	10038-61A
LTIO-540-J2BD	1955-68A	TIO-540-AH1A	10130-61A	TIO-540-J2B	10039-61A
LTIO-540-J2BD	2011-68A	TIO-540-AH1A	10137-61A	TIO-540-J2B	10148-61A
LTIO-540-J2BD	2030-68A	TIO-540-AH1A	10139-61A	TIO-540-J2B	10149-61A
LTIO-540-J2BD	2046-68A	TIO-540-AH1A	10150-61A	TIO-540-J2B	10161-61A
LTIO-540-J2BD	2047-68A	TIO-540-AH1A	10156-61A	TIO-540-J2B	10162-61A
LTIO-540-J2BD	2101-68A	TIO-540-AH1A	10157-61A	TIO-540-J2B	10185-61A
LTIO-540-J2BD	2240-68A	TIO-540-AH1A	10165-61A	TIO-540-J2B	10186-61A
LTIO-540-J2BD	2246-68A	TIO-540-AH1A	10167-61A	TIO-540-J2B	10210-61A
LTIO-540-J2BD	2262-68A	TIO-540-AH1A	10176-61A	TIO-540-J2B	10211-61A
LTIO-540-J2BD	2290-68A	TIO-540-AH1A	10177-61A	TIO-540-J2B	10283-61A
LTIO-540-J2BD	2305-68A	TIO-540-AH1A	10183-61A	TIO-540-J2B	10285-61A
LTIO-540-J2BD	2319-68A	TIO-540-AH1A	10187-61A	TIO-540-J2B	10363-61A
LTIO-540-J2BD	2386-68A	TIO-540-AH1A	10195-61A	TIO-540-J2B	10430-61A
LTIO-540-J2BD	2437-68A	TIO-540-AH1A	10200-61A	TIO-540-J2BD	676-61A
LTIO-540-J2BD	2465-68A	TIO-540-AH1A	10218-61A	TIO-540-J2BD	2080-61A
LTIO-540-J2BD	2471-68A	TIO-540-AH1A	10221-61A	TIO-540-J2BD	2489-61A
LTIO-540-J2BD	2559-68A	TIO-540-AH1A	10223-61A	TIO-540-J2BD	2660-61A
LTIO-540-J2BD	2577-68A	TIO-540-AH1A	10229-61A	TIO-540-J2BD	2941-61A
LTIO-540-J2BD	2594-68A	TIO-540-AH1A	10239-61A	TIO-540-J2BD	3898-61A
LTIO-540-J2BD	2630-68A	TIO-540-AH1A	10247-61A	TIO-540-J2BD	4066-61A
LTIO-540-J2BD	2647-68A	TIO-540-AH1A	10250-61A	TIO-540-J2BD	4133-61A
LTIO-540-J2BD	2684-68A	TIO-540-AH1A	10258-61A	TIO-540-J2BD	4146-61A
LTIO-540-J2BD	2690-68A	TIO-540-AH1A	10259-61A	TIO-540-J2BD	4221-61A
LTIO-540-J2BD	2860-68A	TIO-540-AH1A	10271-61A	TIO-540-J2BD	4664-61A

LTIO-540-J2BD	2879-68A	TIO-540-AH1A	10272-61A	TIO-540-J2BD	4695-61A
LTIO-540-J2BD	2884-68A	TIO-540-AH1A	10279-61A	TIO-540-J2BD	4973-61A
LTIO-540-J2BD	2887-68A	TIO-540-AH1A	10284-61A	TIO-540-J2BD	5111-61A
LTIO-540-J2BD	2966-68A	TIO-540-AH1A	10298-61A	TIO-540-J2BD	5153-61A
LTIO-540-J2BD	2971-68A	TIO-540-AH1A	10299-61A	TIO-540-J2BD	5340-61A
LTIO-540-J2BD	2978-68A	TIO-540-AH1A	10304-61A	TIO-540-J2BD	5561-61A
LTIO-540-J2BD	2981-68A	TIO-540-AH1A	10312-61A	TIO-540-J2BD	5867-61A
LTIO-540-J2BD	2982-68A	TIO-540-AH1A	10317-61A	TIO-540-J2BD	6122-61A
LTIO-540-J2BD	2983-68A	TIO-540-AH1A	10330-61A	TIO-540-J2BD	6334-61A
LTIO-540-J2BD	2984-68A	TIO-540-AH1A	10344-61A	TIO-540-J2BD	6388-61A
LTIO-540-J2BD	2985-68A	TIO-540-AH1A	10353-61A	TIO-540-J2BD	6531-61A
TIO-540-A2B	791-61A	TIO-540-AH1A	10359-61A	TIO-540-J2BD	6540-61A
TIO-540-A2B	1119-61	TIO-540-AH1A	10375-61A	TIO-540-J2BD	6866-61A
TIO-540-A2B	2159-61	TIO-540-AH1A	10424-61A	TIO-540-J2BD	6942-61A
TIO-540-A2B	8594-61A	TIO-540-AH1A	10461-61A	TIO-540-J2BD	6973-61A
TIO-540-A2B	8610-61A	TIO-540-AH1A	10468-61A	TIO-540-J2BD	7024-61A
TIO-540-A2C	1215-61	TIO-540-AH1A	10482-61A	TIO-540-J2BD	7043-61A
TIO-540-A2C	1760-61A	TIO-540-AH1A	10507-61A	TIO-540-J2BD	7058-61A
TIO-540-A2C	2729-61A	TIO-540-AH1A	10531-61A	TIO-540-J2BD	7064-61A
TIO-540-A2C	3048-61A	TIO-540-AH1A	10554-61A	TIO-540-J2BD	7212-61A
TIO-540-A2C	3123-61A	TIO-540-AH1A	10602-61A	TIO-540-J2BD	7417-61A
TIO-540-A2C	3181-61A	TIO-540-AH1A	10609-61A	TIO-540-J2BD	7425-61A
TIO-540-A2C	3271-61A	TIO-540-AJ1A	104-61A	TIO-540-J2BD	7559-61A
TIO-540-A2C	3353-61A	TIO-540-AJ1A	9161-61A	TIO-540-J2BD	7677-61A
TIO-540-A2C	3392-61A	TIO-540-AJ1A	10020-61A	TIO-540-J2BD	7707-61A
TIO-540-A2C	3763-61A	TIO-540-AJ1A	10021-61A	TIO-540-J2BD	7857-61A
TIO-540-A2C	4327-61A	TIO-540-AJ1A	10022-61A	TIO-540-J2BD	7869-61A
TIO-540-A2C	4430-61A	TIO-540-AJ1A	10023-61A	TIO-540-J2BD	7980-61A
TIO-540-A2C	4557-61A	TIO-540-AJ1A	10036-61A	TIO-540-J2BD	8057-61A
TIO-540-A2C	4575-61A	TIO-540-AJ1A	10037-61A	TIO-540-J2BD	8165-61A
TIO-540-A2C	4685-61A	TIO-540-AJ1A	10040-61A	TIO-540-J2BD	8205-61A
TIO-540-A2C	4875-61A	TIO-540-AJ1A	10041-61A	TIO-540-J2BD	8223-61A
TIO-540-A2C	5315-61A	TIO-540-AJ1A	10049-61A	TIO-540-J2BD	8338-61A
TIO-540-A2C	5904-61A	TIO-540-AJ1A	10060-61A	TIO-540-J2BD	8400-61A
TIO-540-A2C	6897-61A	TIO-540-AJ1A	10061-61A	TIO-540-J2BD	8517-61A

TIO-540-A2C	6914-61A	TIO-540-AJ1A	10063-61A	TIO-540-J2BD	8518-61A
TIO-540-A2C	7307-61A	TIO-540-AJ1A	10085-61A	TIO-540-J2BD	8557-61A
TIO-540-A2C	8363-61A	TIO-540-AJ1A	10086-61A	TIO-540-J2BD	8680-61A
TIO-540-A2C	8571-61A	TIO-540-AJ1A	10090-61A	TIO-540-J2BD	9057-61A
TIO-540-A2C	8826-61A	TIO-540-AJ1A	10093-61A	TIO-540-J2BD	9078-61A
TIO-540-A2C	8982-61A	TIO-540-AJ1A	10099-61A	TIO-540-J2BD	9158-61A
TIO-540-A2C	9199-61A	TIO-540-AJ1A	10104-61A	TIO-540-J2BD	9175-61A
TIO-540-A2C	9927-61A	TIO-540-AJ1A	10105-61A	TIO-540-J2BD	9272-61A
TIO-540-A2C	10103-61A	TIO-540-AJ1A	10106-61A	TIO-540-J2BD	9430-61A
TIO-540-A2C	11086-61A	TIO-540-AJ1A	10107-61A	TIO-540-J2BD	9488-61A
TIO-540-AE2A	508-61A	TIO-540-AJ1A	10108-61A	TIO-540-J2BD	9772-61A
TIO-540-AE2A	882-61A	TIO-540-AJ1A	10109-61A	TIO-540-J2BD	9836-61A
TIO-540-AE2A	954-61A	TIO-540-AJ1A	10110-61A	TIO-540-J2BD	9870-61A
TIO-540-AE2A	1129-61A	TIO-540-AJ1A	10111-61A	TIO-540-J2BD	9877-61A
TIO-540-AE2A	1741-61A	TIO-540-AJ1A	10113-61A	TIO-540-J2BD	9973-61A
TIO-540-AE2A	3550-61A	TIO-540-AJ1A	10117-61A	TIO-540-J2BD	10009-61A
TIO-540-AE2A	4117-61A	TIO-540-AJ1A	10118-61A	TIO-540-J2BD	10015-61A
TIO-540-AE2A	4379-61A	TIO-540-AJ1A	10120-61A	TIO-540-J2BD	10024-61A
TIO-540-AE2A	4822-61A	TIO-540-AJ1A	10121-61A	TIO-540-J2BD	10044-61A
TIO-540-AE2A	6168-61A	TIO-540-AJ1A	10126-61A	TIO-540-J2BD	10068-61A
TIO-540-AE2A	6225-61A	TIO-540-AJ1A	10127-61A	TIO-540-J2BD	10082-61A
TIO-540-AE2A	6553-61A	TIO-540-AJ1A	10128-61A	TIO-540-J2BD	10083-61A
TIO-540-AE2A	6584-61A	TIO-540-AJ1A	10134-61A	TIO-540-J2BD	10094-61A
TIO-540-AE2A	6614-61A	TIO-540-AJ1A	10135-61A	TIO-540-J2BD	10095-61A
TIO-540-AE2A	7316-61A	TIO-540-AJ1A	10140-61A	TIO-540-J2BD	10152-61A
TIO-540-AE2A	7891-61A	TIO-540-AJ1A	10141-61A	TIO-540-J2BD	10194-61A
TIO-540-AE2A	8038-61A	TIO-540-AJ1A	10153-61A	TIO-540-J2BD	10216-61A
TIO-540-AE2A	8105-61A	TIO-540-AJ1A	10155-61A	TIO-540-J2BD	10276-61A
TIO-540-AE2A	8360-61A	TIO-540-AJ1A	10160-61A	TIO-540-J2BD	10612-61A
TIO-540-AE2A	9165-61A	TIO-540-AJ1A	10169-61A	TIO-540-J2BD	10763-61A
TIO-540-AE2A	9315-61A	TIO-540-AJ1A	10170-61A	TIO-540-J2BD	11106-61A
TIO-540-AE2A	9674-61A	TIO-540-AJ1A	10171-61A	TIO-540-S1AD	4754-61A
TIO-540-AE2A	9700-61A	TIO-540-AJ1A	10172-61A	TIO-540-S1AD	6218-61A
TIO-540-AE2A	9748-61A	TIO-540-AJ1A	10178-61A	TIO-540-S1AD	6907-61A
TIO-540-AE2A	9767-61A	TIO-540-AJ1A	10179-61A	TIO-540-S1AD	7147-61A

TIO-540-AE2A	9842-61A	TIO-540-AJ1A	10180-61A	TIO-540-S1AD	7474-61A
TIO-540-AE2A	9844-61A	TIO-540-AJ1A	10181-61A	TIO-540-S1AD	7555-61A
TIO-540-AE2A	9846-61A	TIO-540-AJ1A	10184-61A	TIO-540-S1AD	8396-61A
TIO-540-AE2A	9848-61A	TIO-540-AJ1A	10190-61A	TIO-540-S1AD	8851-61A
TIO-540-AE2A	9850-61A	TIO-540-AJ1A	10197-61A	TIO-540-S1AD	9411-61A
TIO-540-AE2A	9852-61A	TIO-540-AJ1A	10199-61A	TIO-540-S1AD	9874-61A
TIO-540-AE2A	9854-61A	TIO-540-AJ1A	10201-61A	TIO-540-U2A	921-61A
TIO-540-AE2A	9861-61A	TIO-540-AJ1A	10202-61A	TIO-540-U2A	2052-61A
TIO-540-AE2A	9862-61A	TIO-540-AJ1A	10203-61A	TIO-540-U2A	2837-61A
TIO-540-AE2A	9866-61A	TIO-540-AJ1A	10209-61A	TIO-540-U2A	3740-61A
TIO-540-AE2A	9906-61A	TIO-540-AJ1A	10213-61A	TIO-540-U2A	4160-61A
TIO-540-AE2A	9918-61A	TIO-540-AJ1A	10220-61A	TIO-540-U2A	4998-61A
TIO-540-AE2A	9919-61A	TIO-540-AJ1A	10222-61A	TIO-540-U2A	5219-61A
TIO-540-AE2A	9930-61A	TIO-540-AJ1A	10224-61A	TIO-540-U2A	5339-61A
TIO-540-AE2A	9931-61A	TIO-540-AJ1A	10226-61A	TIO-540-U2A	5493-61A
TIO-540-AE2A	9953-61A	TIO-540-AJ1A	10227-61A	TIO-540-U2A	6200-61A
TIO-540-AE2A	9962-61A	TIO-540-AJ1A	10231-61A	TIO-540-U2A	6667-61A
TIO-540-AE2A	9963-61A	TIO-540-AJ1A	10232-61A	TIO-540-U2A	6748-61A
TIO-540-AE2A	9964-61A	TIO-540-AJ1A	10233-61A	TIO-540-U2A	6990-61A
TIO-540-AE2A	9968-61A	TIO-540-AJ1A	10234-61A	TIO-540-U2A	7383-61A
TIO-540-AE2A	9985-61A	TIO-540-AJ1A	10235-61A	TIO-540-U2A	7410-61A
TIO-540-AE2A	9987-61A	TIO-540-AJ1A	10236-61A	TIO-540-U2A	7473-61A
TIO-540-AE2A	9994-61A	TIO-540-AJ1A	10237-61A	TIO-540-U2A	7495-61A
TIO-540-AE2A	9997-61A	TIO-540-AJ1A	10245-61A	TIO-540-U2A	7717-61A
TIO-540-AE2A	9998-61A	TIO-540-AJ1A	10246-61A	TIO-540-U2A	7806-61A
TIO-540-AE2A	10016-61A	TIO-540-AJ1A	10249-61A	TIO-540-U2A	9093-61A
TIO-540-AE2A	10028-61A	TIO-540-AJ1A	10253-61A	TIO-540-U2A	9456-61A
TIO-540-AE2A	10033-61A	TIO-540-AJ1A	10257-61A	TIO-540-U2A	9857-61A
TIO-540-AE2A	10034-61A	TIO-540-AJ1A	10261-61A	TIO-540-U2A	9873-61A
TIO-540-AE2A	10052-61A	TIO-540-AJ1A	10263-61A	TIO-540-U2A	9920-61A
TIO-540-AE2A	10053-61A	TIO-540-AJ1A	10264-61A	TIO-540-U2A	9934-61A
TIO-540-AE2A	10056-61A	TIO-540-AJ1A	10267-61A	TIO-540-U2A	10019-61A
TIO-540-AE2A	10057-61A	TIO-540-AJ1A	10268-61A	TIO-540-U2A	10035-61A
TIO-540-AE2A	10058-61A	TIO-540-AJ1A	10273-61A	TIO-540-U2A	10050-61A
TIO-540-AE2A	10075-61A	TIO-540-AJ1A	10277-61A	TIO-540-U2A	10051-61A

TIO-540-AE2A	10079-61A	TIO-540-AJ1A	10280-61A	TIO-540-U2A	10146-61A
TIO-540-AE2A	10080-61A	TIO-540-AJ1A	10281-61A	TIO-540-U2A	10147-61A
TIO-540-AE2A	10084-61A	TIO-540-AJ1A	10282-61A	TIO-540-U2A	10251-61A
TIO-540-AE2A	10123-61A	TIO-540-AJ1A	10286-61A	TIO-540-U2A	10252-61A
TIO-540-AE2A	10125-61A	TIO-540-AJ1A	10289-61A	TIO-540-U2A	10295-61A
TIO-540-AE2A	10143-61A	TIO-540-AJ1A	10293-61A	TIO-540-U2A	10307-61A
TIO-540-AE2A	10144-61A	TIO-540-AJ1A	10294-61A	TIO-540-U2A	10308-61A
TIO-540-AE2A	10145-61A	TIO-540-AJ1A	10296-61A	TIO-540-W2A	9928-61A
TIO-540-AE2A	10151-61A	TIO-540-AJ1A	10297-61A	TIO-540-W2A	9929-61A
TIO-540-AE2A	10154-61A	TIO-540-AJ1A	10302-61A	TIO-540-W2A	9937-61A
TIO-540-AE2A	10158-61A	TIO-540-AJ1A	10310-61A	TIO-540-W2A	9938-61A
TIO-540-AE2A	10163-61A	TIO-540-AJ1A	10311-61A	TIO-540-W2A	10006-61A
TIO-540-AE2A	10166-61A	TIO-540-AJ1A	10313-61A	TIO-540-W2A	10042-61A
TIO-540-AE2A	10191-61A	TIO-540-AJ1A	10314-61A	TIO-540-W2A	10043-61A
TIO-540-AE2A	10192-61A	TIO-540-AJ1A	10315-61A	TIO-540-W2A	10204-61A
TIO-540-AE2A	10193-61A	TIO-540-AJ1A	10316-61A	TIO-540-W2A	10207-61A
TIO-540-AE2A	10198-61A	TIO-540-AJ1A	10320-61A	TIO-540-X120	9882-61A
TIO-540-AE2A	10205-61A	TIO-540-AJ1A	10321-61A	TIO-540-X120	9887-61A
TIO-540-AE2A	10206-61A	TIO-540-AJ1A	10322-61A	TIO-540-X120	9891-61A
TIO-540-AE2A	10208-61A	TIO-540-AJ1A	10325-61A	TIO-540-X120	9893-61A
TIO-540-AE2A	10228-61A	TIO-540-AJ1A	10326-61A	TIO-540-X120	9894-61A
TIO-540-AE2A	10238-61A	TIO-540-AJ1A	10327-61A	TIO-540-X120	9904-61A
TIO-540-AE2A	10248-61A	TIO-540-AJ1A	10328-61A	TIO-540-X120	9905-61A
TIO-540-AE2A	10254-61A	TIO-540-AJ1A	10329-61A	TIO-540-X120	9908-61A
TIO-540-AE2A	10255-61A	TIO-540-AJ1A	10332-61A	TIO-540-X120	9909-61A
TIO-540-AE2A	10256-61A	TIO-540-AJ1A	10333-61A	TIO-540-X120	9922-61A
TIO-540-AE2A	10260-61A	TIO-540-AJ1A	10334-61A	TIO-540-X120	9923-61A
TIO-540-AE2A	10262-61A	TIO-540-AJ1A	10335-61A	TIO-540-X120	9924-61A
TIO-540-AE2A	10265-61A	TIO-540-AJ1A	10339-61A	TIO-540-X143	101115-61
TIO-540-AE2A	10269-61A	TIO-540-AJ1A	10340-61A		
TIO-540-AE2A	10270-61A	TIO-540-AJ1A	10346-61A		

(1) Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A.; telephone (570) 323-6181, contact Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A.; telephone (570) 323-6181 within 50 hours time-in-service (TIS) or 6 months after the effective date of this AD, whichever occurs earlier, to arrange for a crankshaft material test.

(2) Operation of the engine beyond 50 hours TIS or 6 months after the effective date of this AD, whichever occurs earlier, or while the material is being tested is not permitted.

(3) If your crankshaft fails the material testing, remove the crankshaft before further flight.

(4) If your crankshaft passes the material testing, the crankshaft may be returned to service.

IO-540 Engines Modified by STC by Installing a Turbocharger System and All Engines That Have Been Overhauled

(d) If your engine was manufactured, overhauled or had the crankshaft replaced after March 1, 1997, and your engine SN is not covered in paragraphs (a), (b), or (c) of this AD, do the following:

(1) Determine the SN of your crankshaft.

(2) If your crankshaft SN is listed in Table 2 of Lycoming MSB 552, dated August 16, 2002, remove the crankshaft before further flight.

(3) If your crankshaft SN is listed in Table 4 of this AD, do the following; Table 4 follows:

Table 4 SN's of Crankshafts Manufactured From March 2002 to Present

V537925679	V537924595	V537925619	V537925665
V537925690	V537925649	V537925609	V537925668
V537925681	V537925695	V537925617	V537925674
V537925689	V537925702	V537925595	V537925651
V537925656	V537925841	V537925627	V537925697
V537924599	V537925644	V537925626	V537925672
V537925864	V537924597	V537925635	V537925712
V537925877	V537925653	V537925613	V537925868
V537925678	V537925639	V537925629	V537924598
V537925711	V537925634	V537925601	V537925675
V537925870	V537925638	V537925625	V537925851
V537925842	V537925606	V537925598	V537925623
V537925838	V537925593	V537924596	

(i) Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A.; telephone (570) 323-6181, within 10 hours time-in-service (TIS) to arrange for a crankshaft material test.

(ii) Operation of the engine beyond 10 hours TIS after the effective date of this AD or while the material is being tested is not permitted.

(iii) If your crankshaft fails the material testing, remove the crankshaft before further flight.

(iv) If your crankshaft passes the material testing, the crankshaft may be returned to service.

(4) If your crankshaft SN is listed in Table 5 of this AD, do the following; Table 5 follows:

Table 5. Crankshafts Manufactured From March 1997 through March 1999 By SN

0037	V53790300	V537910159	V53795379	V537910654	V53799491
0039A	V53790309	V537910160	V537910555	V537910655	V53799492
0048A	V53790311	V537910161	V537910557	V537910658	V537911246
I17424	V53790312	V537910162	V537910558	V537910659	V537911247
I17425	V53790314	V537910163	V537910559	V53791066	V537911248
I17426	V53790322	V537910165	V537910562	V537910660	V537911249
I17429	V53790324	V537910167	V537910565	V537910661	V537911251
I17438	V53790327	V537910168	V537910567	V537910661	V537911252
I17440	V53790339	V537910169	V537910570	V537910662	V537911253
I17441	V53790407	V537910222	V537910571	V537910663	V537911255
I17442	V53790542	V537910246	V537910572	V537910667	V537911257
I17444	V537910002	V537910248	V537910573	V537910668	V537911260
I17488	V537910003	V537910250	V537910574	V53791067	V537911261
I17491	V537910004	V537910251	V537910576	V537910672	V537911263
I17493	V537910005	V537910252	V537910577	V537910673	V537911267
I17494	V537910006	V537910253	V537910580	V537910675	V537911269
I17497	V537910007	V537910254	V537910581	V537910677	V537911270
I17498	V537910008	V537910260	V537910582	V537910679	V537911271
I17668	V537910009	V537910266	V537910583	V53791068	V537911272
I17669	V537910010	V537910267	V537910584	V537910680	V537911273
I17672	V537910011	V537910280	V537910585	V537910836	V537911274
I17675	V537910013	V537910291	V537910586	V537911201	V537911275
I17679	V537910014	V53791043	V537910588	V537911203	V537911277
I17681	V537910017	V537910472	V537910590	V537911204	V537911278
I17682	V537910018	V537910486	V537910591	V537911205	V537911280
I17683	V537910021	V537910487	V537910597	V537911206	V537911281
I17685	V537910022	V537910488	V537910598	V537911209	V537911284
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I17692	V537910025	V537910493	V537910602	V537911213	V537911287
I17693	V537910026	V537910494	V537910603	V537911214	V537911289
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I17703	V537910034	V537910507	V537910617	V537911228	V537911306
I17704	V537910036	V537910508	V537910618	V537911231	V537911307
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V53794048	V53794851	V53795376	V53791065	V53799489
V53794051	V53794852	V53795377	V537910652	V53799490

(i) Contact Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A.; telephone (570) 323-6181, contact Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A.; telephone (570) 323-6181 within 50 hours time-in-service (TIS) or 6 months after the effective date of this AD, whichever occurs earlier, to arrange for a crankshaft material test.

(ii) Operation of the engine beyond 50 hours TIS or 6 months after the effective date of this AD, whichever occurs earlier, or while the material is being tested is not permitted.

(iii) If your crankshaft fails the material testing, remove the crankshaft before further flight.

(iv) If your crankshaft passes the material testing, the crankshaft may be returned to service.

Disposition of Crankshafts That Have Passed the Material Test

(e) A crankshaft that has passed the Lycoming material testing may be returned to service.

Disposition of Crankshafts That Have Failed the Material Test

(f) After the effective date of this AD, do not install in any engine, any crankshaft that has failed the material test.

Denial of Alternative Methods of Compliance

(g) An alternative method of compliance to perform material testing on crankshafts listed by SN in Table 2 of Lycoming MSB 552, dated August 16, 2002, will not be approved.

Special Flight Permits

(h) Special flight permits may be issued in accordance with Sec. Sec. 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be done.

Documents That Have Been Incorporated By Reference

(i) The actions must be done in accordance with the following Lycoming Mandatory Service Bulletin No. 552, dated August 16, 2002. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Lycoming, 652 Oliver Street, Williamsport, PA 17701, U.S.A. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

Effective Date

(j) This amendment becomes effective September 20, 2002.

Issued in Burlington, Massachusetts, on September 16, 2002.

Francis A. Favara,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 02-24030 Filed 9-19-02; 8:45 am]

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